

Appl. No 10/614,261
Amdt. Dated Dec. 10, 2007
Reply to Office Action of Sep. 11, 2007

REMARKS

A. Status of the Claims

Claims 18-33 are currently pending. Claims 18-25 have been withdrawn. Claims 28, 31, 32, and 33 have been amended in response to Examiner's objections. Claims 26, 27, 29, and 30 remain unchanged. Reconsideration and further examination are respectfully requested.

B. Claim Objections

The Examiner has objected to informalities in claims 28, 31, 32, and 33. Applicant has corrected these errors by amending claims 28, 31, 32, and 33. Applicant respectfully request that the objections of the amended claims 28, 31, 32, and 33 be withdrawn. Favorable reconsideration is requested.

C. The 35 U.S.C. § 102 Rejection

The Examiner has rejected claims 26 and 31-33 under 35 U.S.C. § 103(a) as being anticipated by Kinrot et al. The method of translation measurement of a surface as disclosed in the present invention and that of Kinrot are very distinctive and Kinrot therefore does not anticipate the present invention. Applicant respectfully traverses the rejection of these claims.

In regards to claim 26, your item (a), a laser is indeed used by both inventions. Your item (b), Kinrot does not make use of the laser speckle pattern that may be generated from a general surface. In fact, it is to be avoided for his method to function, see for example Col 26, lines 62 to 65 in which his method must have "speckle-free, coherent detection." To block out the speckle pattern Kinrot resorts to the use of special optical components placed in front of the detector, see col 28 lines 48 to 52, "as shown in FIG. 1, a spatial filter in front of the detector is preferably comprised of focusing lens 18 and narrow pinhole 20 at the focal point of the lens. Such a spatial filter is preferably adjusted to select only a single spatial frequency component to

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reach the detector." Your item (c), since in Kinrot only a single spatial frequency component passes to his detector it is therefore not performing a spatial autocorrelation computation as is the case in the present invention which requires an optically-sensed digitally-autocorrelated navigation chip as the receiving detector to use the speckle pattern in producing the translation measurement. Both the present invention and Kinrot "generate signals to control a computer." This is general descriptive language of all devices that take a measurement and control a computer and is not meant to be the inventive part. In view of the drastic departures in detection and computation methods, Applicant submits that Kinrot does not disclose the apparatus of the present invention Claim 26. It would take an exceptional exercise of inventive skill to generate these inventions from the mere fact that they employ a laser.

In regards to present invention Claim 31, notwithstanding that Kinrot does not disclose the apparatus of present invention Claim 26 as noted above, Kinrot goes on to make the further departure from the present invention of actually directing a portion of the laser beam directly into the receiving means as can be noted in Fig 3A, see col. 38 lines 35 to 65. In figure 3A, Kinrot discloses his structure as a glass substrate 36 to which is attached a laser 32 which projects a laser beam to a grating 38 which directs a portion of the beam to mirrors 40, 41 and 45 which direct the beam directly into his (receiving) detectors 52 and 50. Kinrot does this because his method depends on heterodyne detection of the light with simple point detectors which are unlike the method in the present invention. Deriving one from the other would require exceptional inventive skill.

With regard to present invention Claim 32, Kinrot does not disclose the second rigid unit of present invention Claim 31 because he does not make use of the laser speckle pattern (in fact rejects it as noted above) nor does he use the receiving means of the present invention Claim 26.

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With regard to claim 33, Kinrot does not disclose the rigid unit of the present invention Claim 31 because he does not use or suggest the use of an optically sensed digitally autocorrelated navigation chip, the essential element in Claim 26 of the present invention.

For the foregoing reasons, Applicant respectfully request that the § 102 rejection of the original claim 26 and amended claims 31-33 be withdrawn. Favorable reconsideration is requested.

D. The 35 U.S.C. § 103 Rejection

The Examiner has rejected claims 26-30 under 35 U.S.C. § 103(a) as being unpatentable over Koizumi et al. in view of Rallison et al. Applicant respectfully traverses the rejection of these claims.

Basically Koizumi discloses a method for controlling a computer using head movement and Rallison discloses a means for generating a speckle pattern using a laser. It will be demonstrated that taking the teachings of Rallison and combining them with the teachings of Koizumi will not obviously render the art of the present invention.

First, the art of controlling a

computer with the movement of a body part is not the novelty at issue here, for example an invention issued to Taboada et al (US 5,345,281) discloses the controlling of a computer with the movement of the human eye. This cited invention also discloses signals connected to a computer, so connectedness is also not at issue. The fact that head movement is used to control the computer is also not the issue as there are other prior art methods that control a computer by head movement, see for example Ellis (US 4,111,555) who discloses a helmet mounted means for rendering measurement of head movement. The primary issue concerns then the method of exacting a precise control of a computer with head movement (or movement of any part for that

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matter). Let us consider now combining the arts of Rallison and Koizumi. The obvious modification of Koizumi would be to replace the optical signal transmitter 1 in figure 1 of Koizumi with the speckle pattern produced by the coherent source 402 and diffuser 406 in figure 4A of Rallison and see what results. The result would be poor performance or no performance at all of Koizumi's method. The reason being is that Koizumi depends on the optical signal transmitter having a plurality of directed beams for transmitter 1 (see col. 4 line 64 to col. 5 line 23) which is not characteristic of a laser speckle pattern generated as in Rallison that has isotropic (omni-directional) distribution. Also, Koizumi does not make use of an optically-sensed digitally-autocorrelated navigation chip, to do so would have required the exercise of exceptional inventive talent as it was not known in the art that such a function was possible for such an element until the disclosure of the present invention. Also there are no moiré patterns present in Koizumi's apparatus; in fact they are not an issue. In view of the aforementioned analysis, Koizumi taken in combination with Rallison does not disclose Claims 26 to 29, because the combination lacks the inventive incorporation of the use of an optically sensed digitally autocorrelated navigation chip, the essential elements of the present invention.

In regards to Claim 29 Koizumi taken in combination with Rallison does not disclose the first rigid unit of Claim 28 because they both lack the inventive incorporation of said optically-sensed digitally-autocorrelated navigation chip element without which they can not communicate computer controlling signals (based on laser speckle pattern autocorrelation) to a computer indicative of the motion of the first rigid unit.

In regards to Claim 30, again Koizumi taken in combination with Rallison does not disclose the first rigid unit of Claim 27 because the combination does not contain the essential

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elements of the present invention as noted above to which Claim 27 depends on in Claim 26.

You cannot practice the art of the present invention without the presence of all the elements.

For the foregoing reasons, Applicant respectfully request that the § 102 rejection of the original claims 26, 27, 29, and 30 and amended claims 28 be withdrawn. Favorable reconsideration is requested.

X. Conclusion

In view of the above remarks, Applicant respectfully submits that all pending claims are in condition for allowance. Reconsideration of the application and claims is courteously solicited. Should the Examiner have any questions, comments or suggestions relating to the present patent application, the Examiner is invited to contact me at (210) 224-8876.

Respectfully submitted,



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